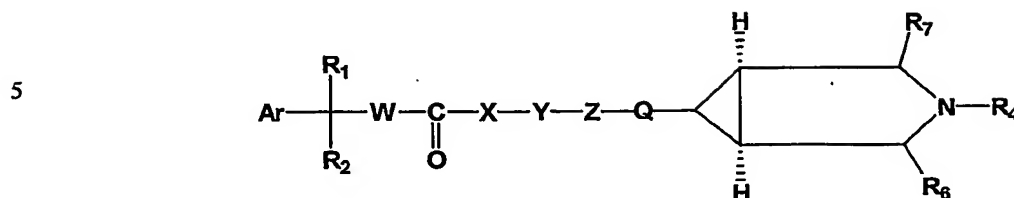


WE CLAIM:

1. A compound having the structure of Formula I:

**FORMULA - I**

and its pharmaceutically acceptable salts, pharmaceutically acceptable solvates,
 10 esters, enantiomers, diastereomers, N-oxides, polymorphs, prodrugs, metabolites, wherein

Ar represents an aryl or a heteroaryl ring having 1-2 hetero atoms selected from the
 group consisting of oxygen, sulphur and nitrogen atoms, the aryl or heteroaryl rings
 15 may be unsubstituted or substituted by one to three substituents independently
 selected from lower alkyl (C₁-C₄), lower perhalo alkyl (C₁-C₄), cyano, hydroxy, nitro,
 lower alkoxy (C₁-C₄), lower perhalo alkoxy (C₁-C₄), unsubstituted amino, N-lower
 alkyl (C₁-C₄) amino or N-lower alkyl(C₁-C₄) amino carbonyl;

20 R₁ represents a hydrogen, hydroxy, hydroxy methyl, amino, alkoxy, carbamoyl or
 halogen (e.g. fluorine, chlorine, bromine and iodine);

R₂ represents alkyl, C₃-C₇ cycloalkyl ring, a C₃-C₇ cyclo alkenyl ring, an aryl or a
 heteroaryl ring having 1 to 2 hetero atoms selected from a group consisting of oxygen,
 25 sulphur and nitrogen atoms; the aryl or a heteroaryl ring may be unsubstituted or
 substituted by one to three substituents independently selected from lower alkyl (C₁-
 C₄), lower perhalo alkyl (C₁-C₄), cyano, hydroxy, nitro, lower alkoxy carbonyl,
 halogen, lower alkoxy (C₁-C₄), lower perhalo alkoxy (C₁-C₄), unsubstituted amino,
 N-lower alkylamino (C₁-C₄), N-lower alkylamino carbonyl (C₁-C₄);

30

W represents (CH₂)_p, where p represents 0 to 1;

X represents an oxygen, sulphur, nitrogen or no atom;

Y represents CHR_5CO wherein R_5 represents hydrogen or methyl or $(\text{CH}_2)_q$ wherein q represents 0 to 4;

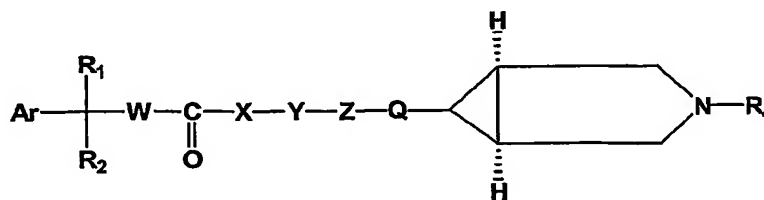
Z represents oxygen, sulphur, NR_{10} , wherein R_{10} represents hydrogen, C_{1-6} alkyl;

Q represents $(\text{CH}_2)_n$ wherein n represents 0 to 4, or CHR_8 wherein R_8 represents H, OH, C_{1-6} , alkyl, alkenyl alkoxy or CH_2CHR_9 wherein R_9 represents H, OH, lower alkyl ($\text{C}_1\text{-C}_4$) or lower alkoxy ($\text{C}_1\text{-C}_4$);

R_6 and R_7 are independently selected from COOH , H, CH_3 , CONH_2 , NH_2 , CH_2NH_2 ;

R_4 represents $\text{C}_1\text{-C}_{15}$ saturated or unsaturated aliphatic hydrocarbon groups in which any 1 to 6 hydrogen atoms may be substituted with the group independently selected from halogen, arylalkyl, arylalkenyl, heteroarylalkyl or heteroarylalkenyl having 1 to 2 hetero atoms selected from a group consisting of nitrogen, oxygen and sulphur atoms with option that any 1 to 3 hydrogen atoms on the ring in said arylalkyl, arylalkenyl, hetero arylalkenyl group may be substituted with lower alkyl ($\text{C}_1\text{-C}_4$), lower perhalo alkyl ($\text{C}_1\text{-C}_4$), cyano, hydroxyl, nitro, lower alkoxy carbonyl, halogen, lower alkoxy ($\text{C}_1\text{-C}_4$), lower perhaloalkoxy ($\text{C}_1\text{-C}_4$), unsubstituted amino, N-lower alkyl ($\text{C}_1\text{-C}_4$) amino, N-lower alkyl ($\text{C}_1\text{-C}_4$) amino carbonyl.

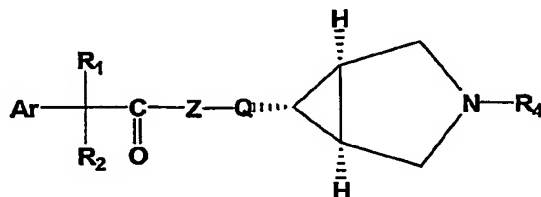
2. The compound according to claim 1 having the structure of Formula II (Formula I when R_6 and $\text{R}_7 = \text{H}$) and its pharmaceutically acceptable salts, pharmaceutically acceptable solvates, esters, enantiomers, diastereomers, N-oxides, polymorphs, prodrugs, metabolites, wherein Ar, R_1 , R_2 , W, X, Y, Z, Q and R_4 are as defined for Formula I.




FORMULA - II

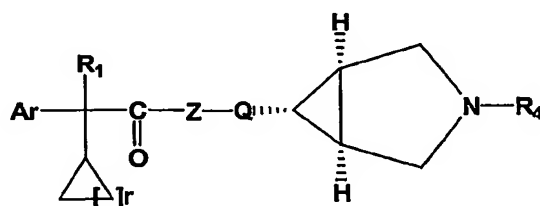
3. The compound according to claim 1 having the structure of Formula III (Formula I wherein W is $(\text{CH}_2)_p$ where $p = 0$, X is no atom and Y is $(\text{CH}_2)_q$ where $q=0$, $\text{R}_6 = \text{H}$, $\text{R}_7 = \text{H}$) and R_2 its pharmaceutically acceptable salts, pharmaceutically acceptable

solvates, esters, enantiomers, diastereomers, N-oxides, polymorphs, prodrugs, metabolites, wherein Ar, R₁, R₂, Z, Q and R₄ are as defined for Formula I.




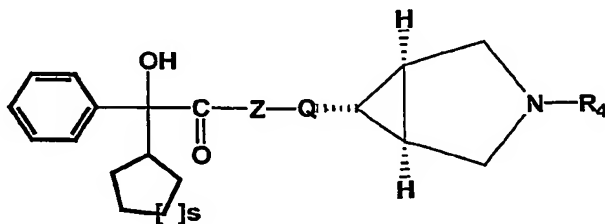
FORMULA - III

4. The compound according to claim 1 having the structure of Formula IV [Formula I wherein W is (CH₂)_p where p = 0, X is no atom and Y is (CH₂)_q where q=0, R₆ = H, R₇ = H and R₂ = ] and its pharmaceutically acceptable salts, pharmaceutically acceptable solvates, esters, enantiomers, diastereomers, N-oxides, polymorphs, prodrugs, metabolites, wherein Ar, R₁, Z, Q and R₄ are as defined for Formula I, and r is 1 to 4.



Formula IV

5. The compound according to claim 1 having the structure of Formula V (Formula-I wherein W is (CH₂)_p where p = 0, X is no atom and Y is (CH₂)_q where q=0, R₆ = H, R₇ = H, R₂ = , R₁ is hydroxy, Ar is phenyl), and its pharmaceutically acceptable salts, esters, enantiomers, N-oxides, prodrugs or metabolites; wherein R₄, Z and Q are the same as defined for Formula I, and s represents 1 to 2.



Formula V

6. A compound selected from the group consisting of:

- (1 α ,5 α ,6 α)-N-[3-benzyl-3-azabicyclo[3.1.0]hexyl-6-(aminomethyl)-yl]-2-hydroxy-2,2-diphenyl acetamide.(Compound No. 1)
- 5 (1 α ,5 α ,6 α)-N-[3-benzyl-3-azabicyclo[3.1.0]hexyl-6-(aminomethyl)-yl]-2-hydroxy-2-cyclohexyl-2-phenyl acetamide.(Compound No. 2)
- (1 α ,5 α ,6 α)-N-[3-benzyl-3-azabicyclo[3.1.0]hexyl-6-(aminomethyl)-yl]-2-hydroxy-2-cyclopentyl-2-phenyl acetamide.(Compound No. 3)
- (1 α ,5 α ,6 α)-[3-benzyl-3-azabicyclo[3.1.0]hexyl-6-(methyl)-yl]-2-hydroxy-2,2-diphenyl acetate.(Compound No. 4)
- 10 (1 α ,5 α ,6 α)-[3-benzyl-3-azabicyclo[3.1.0]hexyl-6-(methyl)-yl]-2-hydroxy-2-cyclohexyl-2-phenyl acetate.(Compound No. 5)
- (1 α ,5 α ,6 α)-[3-benzyl-3-azabicyclo[3.1.0]hexyl-6-(methyl)-yl]-2-hydroxy-2-cyclopentyl-2-phenyl acetate.(Compound No. 6)
- 15 (1 α ,5 α ,6 α)-[3-(2-(2,3-dihydrobenzofuran-5-yl)ethyl)-3-azabicyclo[3.1.0]hexyl-6-(methyl)-yl]-2-hydroxy-2-cyclohexyl-2-phenyl acetate.(Compound No. 7)
- (1 α ,5 α ,6 α)-[3-(2-(2,3-dihydrobenzofuran-5-yl)ethyl)-3-azabicyclo[3.1.0]hexyl-6-(methyl)-yl]-2-hydroxy-2-cyclopentyl-2-phenyl acetate.(Compound No. 8)
- (1 α ,5 α ,6 α)-N-[3-(2-(2,3-dihydrobenzofuran-5-yl)ethyl)-3-azabicyclo[3.1.0]hexyl-6-(aminomethyl)-yl]-2-hydroxy-2-cyclohexyl-2-phenyl acetamide.(Compound No. 9)
- 20 (1 α ,5 α ,6 α)-N-[3-(2-(2,3-dihydrobenzofuran-5-yl)ethyl)-3-azabicyclo[3.1.0]hexyl-6-(aminomethyl)-yl]-2-hydroxy-2-cyclopentyl-2-phenyl acetamide.(Compound No. 10)
- (1 α ,5 α ,6 α)-[3-(2-(3,4-methylenedioxyphenyl)ethyl)-3-azabicyclo[3.1.0]hexyl-6-(methyl)-yl]-2-hydroxy-2-cyclopentyl-2-phenyl acetate.(Compound No. 11)
- 25 (1 α ,5 α ,6 α)-[3-(2-(3,4-methylenedioxyphenyl)ethyl)-3-azabicyclo[3.1.0]hexyl-6-(methyl)-yl]-2-hydroxy-2-cyclohexyl-2-phenyl acetate.(Compound No. 12)
- (1 α ,5 α ,6 α)-N-[3-(2-(3,4-methylenedioxyphenyl)ethyl)-3-azabicyclo[3.1.0]hexyl-6-(aminomethyl)-yl]-2-hydroxy-2-cyclopentyl-2-phenyl acetamide.(Compound No. 13)
- (1 α ,5 α ,6 α)-N-[3-(2-(3,4-methylenedioxyphenyl)ethyl)-3-azabicyclo[3.1.0]hexyl-6-(aminomethyl)-yl]-2-hydroxy-2-cyclohexyl-2-phenyl acetamide.(Compound No. 14)
- 30 (1 α ,5 α ,6 α)-N-[3-(4-methyl-3-pentenyl)-3-azabicyclo[3.1.0]hexyl-6-(aminomethyl)-yl]-2-hydroxy-2-cyclohexyl-2-phenyl acetamide.(Compound No. 15)
- (1 α ,5 α ,6 α)-N-[3-(4-methyl-3-pentenyl)-3-azabicyclo[3.1.0]hexyl-6-(aminomethyl)-yl]-2-hydroxy-2-cyclopentyl-2-phenyl acetamide.(Compound No. 16)
- 35 (1 α ,5 α ,6 α)-[3-(4-methyl-3-pentenyl)-3-azabicyclo[3.1.0]hexyl-6-(methyl)-yl]-2-hydroxy-2-cyclohexyl-2-phenyl acetate.(Compound No. 17)
- (1 α ,5 α ,6 α)-[3-(4-methyl-3-pentenyl)-3-azabicyclo[3.1.0]hexyl-6-(methyl)-yl]-2-hydroxy-2-cyclopentyl-2-phenyl acetate.(Compound No. 18)
- (1 α ,5 α ,6 α)-[3-(1-phenylethyl)-3-azabicyclo[3.1.0]hexyl-6-(methyl)-yl]-2-hydroxy-2-cyclopentyl-2-phenyl acetate.(Compound No. 19)

- (1 α ,5 α ,6 α)-[3-(1-phenylethyl)-3-azabicyclo[3.1.0]hexyl-6-(methyl)-yl]-2-hydroxy-2-cyclohexyl-2-phenyl acetate.(Compound No. 20)
- (1 α ,5 α ,6 α)-N-[3-(1-phenylethyl)-3-azabicyclo[3.1.0]hexyl-6-(aminomethyl)-yl]-2-hydroxy-2-cyclohexyl-2-phenyl acetamide.(Compound No. 21)
- 5 (1 α ,5 α ,6 α)-N-[3-(1-phenylethyl)-3-azabicyclo[3.1.0]hexyl-6-(aminomethyl)-yl]-2-hydroxy-2-cyclopentyl-2-phenyl acetamide.(Compound No. 22)
- (1 α ,5 α ,6 α)-N-[3-benzyl-3-azabicyclo[3.1.0]hexyl-6-(1-aminoethyl)-yl]-2-hydroxy-2,2-diphenyl acetamide.(Compound No. 23)
- 10 (1 α ,5 α ,6 α)-N-[3-benzyl-3-azabicyclo[3.1.0]hexyl-6-(1-aminoethyl)-yl]-2-hydroxy-2-cyclohexyl-2-phenyl acetamide.(Compound No. 24)
- (1 α ,5 α ,6 α)-N-[3-benzyl-3-azabicyclo[3.1.0]hexyl-6-(1-aminoethyl)-yl]-2-hydroxy-2-cyclopentyl-2-phenyl acetamide.(Compound No. 25)
- (1 α ,5 α ,6 α)-[3-(3-methyl-2-butenyl)-3-azabicyclo[3.1.0]hexyl-6-(methyl)-yl]-2-hydroxy-2-cyclohexyl-2-phenyl acetate.(Compound No. 26)
- 15 (1 α ,5 α ,6 α)-[3-(3-methyl-2-butenyl)-3-azabicyclo[3.1.0]hexyl-6-(methyl)-yl]-2-hydroxy-2-cyclopentyl-2-phenyl acetate.(Compound No. 27)
- (2R)-(+)- (1 α ,5 α ,6 α)-N-[3-benzyl-3-azabicyclo[3.1.0]hexyl-6-(aminomethyl)-yl]-2-hydroxy-2-cyclohexyl-2-phenyl acetamide.(Compound No. 28)
- 20 (2R)-(+)- (1 α ,5 α ,6 α)-N-[3-benzyl-3-azabicyclo[3.1.0]hexyl-6-(aminomethyl)-yl]-2-hydroxy-2-cyclopentyl-2-phenyl acetamide.(Compound No. 29)
- (2R) (+)-(1 α ,5 α ,6 α)-[3-benzyl-3-azabicyclo[3.1.0]hexyl-6-(methyl)-yl]-2-hydroxy-2-cyclohexyl-2-phenyl acetate.(Compound No. 30)
- (2R) (+)-(1 α ,5 α ,6 α)-[3-benzyl-3-azabicyclo[3.1.0]hexyl-6-(methyl)-yl]-2-hydroxy-2-cyclopentyl-2-phenyl acetate.(Compound No. 31)
- 25 (2S)-(-)- (1 α ,5 α ,6 α)-N-[3-benzyl-3-azabicyclo[3.1.0]hexyl-6-(aminomethyl)-yl]-2-hydroxy-2-cyclopentyl-2-phenyl acetamide.(Compound No. 32)
- (2S)-(-)-(1 α ,5 α ,6 α)-[3-benzyl-3-azabicyclo[3.1.0]hexyl-6-(methyl)-yl]-2-hydroxy-2-cyclopentyl-2-phenyl acetate.(Compound No. 33)
- 30 (1 α ,5 α ,6 α)-N-[3-benzyl-3-azabicyclo[3.1.0]hexyl-6-(aminomethyl)-yl]-2-hydroxy-2-cyclopentyl-2-phenyl acetamide L-(+)-tartrate salt.(Compound No. 34)
- (2R)-(+)- (1 α ,5 α ,6 α)-N-[3-benzyl-3-azabicyclo[3.1.0]hexyl-6-(aminomethyl)-yl]-2-hydroxy-2-cyclohexyl-2-phenyl acetamide. L-(+)-tartrate salt.(Compound No. 35)
- (2R)-(+)- (1 α ,5 α ,6 α)-N-[3-benzyl-3-azabicyclo[3.1.0]hexyl-6-(aminomethyl)-yl]-2-hydroxy-2-cyclopentyl-2-phenyl acetamide. L-(+)-tartrate salt.(Compound No. 36)
- 35 (1 α ,5 α ,6 α)-N-[3-benzyl-3-azabicyclo[3.1.0]hexyl-6-(aminomethyl)-yl]-2-hydroxy-2-cyclobutyl-2-phenyl acetamide.(Compound No. 37)
- (1 α ,5 α ,6 α)-N-[3-benzyl-3-azabicyclo[3.1.0]hexyl-6-(aminomethyl)-yl]-2-hydroxy-2-cyclopropyl-2-phenyl acetamide.(Compound No. 38)
- 40 (1 α ,5 α ,6 α)-N-[3-(3-methyl-2-butenyl)-3-azabicyclo[3.1.0]hexyl-6-(aminomethyl)-yl]-2-hydroxy-2-cyclohexyl-2-phenyl acetamide.(Compound No. 39)

- (1 α ,5 α ,6 α)-[3-(3,4-methylenedioxyphenyl)methyl-3-azabicyclo[3.1.0]hexyl-6-(methyl)-yl]-2-hydroxy-2-cyclopentyl-2-phenyl acetate.(Compound No. 40)
- (1 α ,5 α ,6 α)-[3-(2-(3,4-methylenedioxyphenyl)ethyl)-3-azabicyclo[3.1.0]hexyl-6-(methyl)-yl]-2-hydroxy-2-cyclopentyl-2-phenyl acetate. L-(+)-tartrate salt.(Compound No. 41)
- (1 α ,5 α ,6 α)-[3-benzyl-3-azabicyclo[3.1.0]hexyl-6-(methyl)-yl]-2-hydroxy-2,2-diphenyl acetate L-(+)-tartrate salt .(Compound No. 42)
- (1 α ,5 α ,6 α)-[3-benzyl-3-azabicyclo[3.1.0]hexyl-6-(methyl)-yl]-2-hydroxy-2-cyclohexyl-2-phenyl acetate L-(+)-tartrate salt.(Compound No. 43)
- (1 α ,5 α ,6 α)-[3-benzyl-3-azabicyclo[3.1.0]hexyl-6-(methyl)-yl]-2-hydroxy-2-cyclopentyl-2-phenyl acetate L-(+)-tartrate salt. (Compound No. 44)
- (1 α ,5 α ,6 α)-N-[3-(3-pyridylmethyl)-3-azabicyclo[3.1.0]hexyl-6-(aminomethyl)-yl]-2-hydroxy-2-cyclohexyl-2-phenyl acetamide (Compound No. 45)
- (1 α ,5 α ,6 α)-N-[3-(4-pyridylmethyl)-3-azabicyclo[3.1.0]hexyl-6-(aminomethyl)-yl]-2-hydroxy-2-cyclohexyl-2-phenyl acetamide (Compound No.46)
- (1 α ,5 α ,6 α)-N-[3-(2-pyridylmethyl)-3-azabicyclo[3.1.0]hexyl-6-(aminomethyl)-yl]-2-hydroxy-2-cyclohexyl-2-phenyl acetamide (Compound No.47)
- (1 α ,5 α ,6 α)-N-[3-(4-pyridylmethyl)-3-azabicyclo[3.1.0]hexyl-6-(aminomethyl)-yl]-2-hydroxy-2-cyclopentyl-2-phenyl acetamide (Compound No.48)
- (1 α ,5 α ,6 α)-N-[3-(3-pyridylmethyl)-3-azabicyclo[3.1.0]hexyl-6-(aminomethyl)-yl]-2-hydroxy-2,2-diphenyl acetamide (Compound No.49)
- (1 α ,5 α ,6 α)-N-[3-(4-pyridylmethyl)-3-azabicyclo[3.1.0]hexyl-6-(aminomethyl)-yl]-2-hydroxy-2,2-diphenyl acetamide (Compound No.50)
- (1 α ,5 α ,6 α)-N-[3-(2-pyridylmethyl)-3-azabicyclo[3.1.0]hexyl-6-(aminomethyl)-yl]-2-hydroxy-2,2-diphenyl acetamide (Compound 51)
- (1 α ,5 α ,6 α)-N-[3-(2-pyridylmethyl)-3-azabicyclo[3.1.0]hexyl-6-(aminomethyl)-yl]-2-hydroxy-2-cyclopentyl-2-phenyl acetamide (Compound No.52)
- (1 α ,5 α ,6 α)-N-[3-(3-pyridylmethyl)-3-azabicyclo[3.1.0]hexyl-6-(aminomethyl)-yl]-2-hydroxy-2-cyclopentyl-2-phenyl acetamide (Compound No.53)
- (1 α ,5 α ,6 α)-N-[3-(3-methyl-2-butenyl)-3-azabicyclo[3.1.0]hexyl-6-(aminomethyl)-yl]-2-hydroxy-2-cyclopentyl-2-phenyl acetamide (Compound No.54)
- (1 α ,5 α ,6 α)-N-[3-(3,4-methylenedioxyphenyl)methyl-3-azabicyclo[3.1.0]hexyl-6-(aminomethyl)-yl]-2-hydroxy-2-cyclopentyl-2-phenyl acetamide (Compound No.55)
- (1 α ,5 α ,6 α)-N-[3-(3,4-methylenedioxyphenyl)methyl-3-azabicyclo[3.1.0]hexyl-6-(aminomethyl)-yl]-2-hydroxy-2-cyclohexyl-2-phenyl acetamide (Compound 56)
- (1 α ,5 α ,6 α)-[3-(4-methyl-3-pentenyl)-3-azabicyclo[3.1.0]hexyl-6-(methyl)-yl]-2-hydroxy-2-cyclohexyl-2-phenyl acetate L-(+) tartrate salt(Compound 57)
- (1 α ,5 α ,6 α)-[3-(2-(3,4-methylenedioxyphenyl)ethyl)-3-azabicyclo[3.1.0]hexyl-6-(methyl)-yl]-2-hydroxy-2-cyclohexyl-2-phenyl acetate. L-(+) tartrate salt(Compound 58)

(1 α ,5 α ,6 α)-[3-(1-phenylethyl)-3-azabicyclo[3.1.0]hexyl-6-(methyl)-yl]-2-hydroxy-2-cyclopentyl-2-phenyl acetate. L(+) tartrate salt(Compound 59)

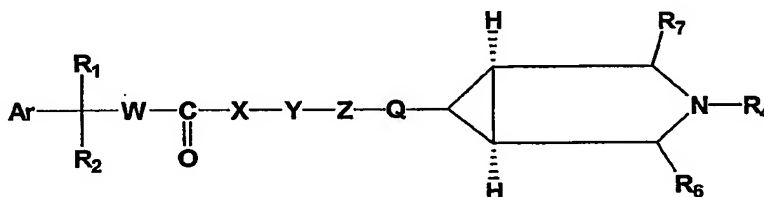
(1 α ,5 α ,6 α)-N-[3-benzyl-3-azabicyclo [3.1.0]-hexyl-6-(aminomethyl)-yl]-2-hydroxy-2-cyclopentyl-2-phenyl acetamide .hydrochloride salt (Compound No. 60)

(1 α ,5 α ,6 α)-N-[3-benzyl-3-azabicyclo [3.1.0]-hexyl-6-(aminomethyl)-yl]-2-hydroxy-2-cyclopentyl-2-phenyl acetamide . L(-) malic acid salt (Compound No. 61)

(1 α ,5 α ,6 α)-N-[3-benzyl-3-azabicyclo [3.1.0]-hexyl-6-(aminomethyl)-yl]-2-hydroxy-2-cyclopentyl-2-phenyl acetamide. maleate salt (Compound No. 62)

7. A pharmaceutical composition comprising a therapeutically effective amount of a compound as defined in claim 1, 2, 3, 4, 5 or 6 together with pharmaceutically acceptable carriers, excipients or diluents.

8. A method for treatment or prophylaxis of an animal or a human suffering from a disease or disorder of the respiratory, urinary and gastrointestinal systems, wherein the disease or disorder is mediated through muscarinic receptors, comprising administering to said animal or human, a therapeutically effective amount of a compound having the structure of Formula I,



Formula I

or its pharmaceutically acceptable salts, pharmaceutically acceptable solvates, esters, enantiomers, diastereomers, N-oxides, polymorphs, prodrugs or metabolites, wherein:

Ar represents an aryl or a heteroaryl ring having 1-2 hetero atoms selected from the group consisting of oxygen, sulphur and nitrogen atoms, the aryl or heteroaryl rings may be unsubstituted or substituted by one to three substituents independently selected from lower alkyl (C₁-C₄), lower perhalo alkyl (C₁-C₄), cyano, hydroxy, nitro, lower alkoxy (C₁-C₄), lower perhalo alkoxy (C₁-C₄), unsubstituted amino, N-lower alkyl (C₁-C₄) amino or N-lower alkyl (C₁-C₄) amino carbonyl;

R₁ represents a hydrogen, hydroxy, hydroxy methyl, amino, alkoxy, carbamoyl or halogen (e.g. fluorine, chlorine, bromine and iodine);

5 R₂ represents alkyl, C₃-C₇ cycloalkyl ring, a C₃-C₇ cyclo alkenyl ring, an aryl or a heteroaryl ring having 1 to 2 hetero atoms selected from a group consisting of oxygen, sulphur and nitrogen atoms; the aryl or a heteroaryl ring may be unsubstituted or substituted by one to three substituents independently selected from lower alkyl (C₁-C₄), lower perhalo alkyl (C₁-C₄), cyano, hydroxy, nitro, lower alkoxy, carbonyl, halogen, lower alkoxy (C₁-C₄), lower perhalo alkoxy (C₁-C₄), unsubstituted amino, 10 N-lower alkyl(C₁-C₄)amino, N-lower alkyl(C₁-C₄)amino carbonyl;

W represents (CH₂)_p, where p represents 0 to 1;

X represents an oxygen, sulphur, nitrogen or no atom;

Y represents CHR₅CO wherein R₅ represents hydrogen or methyl or (CH₂)_q wherein 15 q represents 0 to 4;

Z represents oxygen, sulphur, NR₁₀, wherein R₁₀ represents hydrogen, C₁₋₆ alkyl;

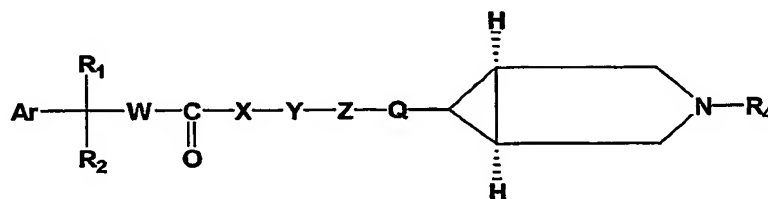
Q represents (CH₂)_n wherein n represents 0 to 4, or CHR₈ wherein R₈ represents H, OH, C₁₋₆, alkyl, alkenyl alkoxy or CH₂CHR₉ wherein R₉ represents H, OH, lower 20 alkyl (C₁-C₄) or lower alkoxy (C₁-C₄);

R₆ and R₇ are independently selected from COOH, H, CH₃, CONH₂, NH₂, CH₂NH₂;

R₄ represents C₁-C₁₅ saturated or unsaturated aliphatic hydrocarbon groups in which any 1 to 6 hydrogen atoms may be substituted with the group independently selected from halogen, arylalkyl, arylalkenyl, heteroarylalkyl or heteroarylalkenyl having 1 to 25 2 hetero atoms selected from a group consisting of nitrogen, oxygen and sulphur atoms with option that any 1 to 3 hydrogen atoms on the ring in said arylalkyl, arylalkenyl, hetero arylalkenyl group may be substituted with lower alkyl(C₁-C₄), lower perhalo alkyl (C₁-C₄), cyano, hydroxyl, nitro, lower alkoxy, carbonyl, halogen, lower alkoxy (C₁-C₄), lower perhaloalkoxy (C₁-C₄), unsubstituted amino, N-lower 30 alkyl (C₁-C₄) amino, N-lower alkyl (C₁-C₄) amino carbonyl.

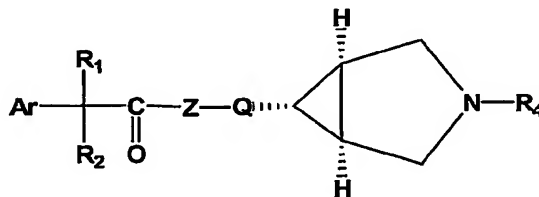
9. The method according to claim 8 for treatment or prophylaxis of an animal or a human suffering from a disease or disorder of the respiratory, urinary and gastrointestinal systems, wherein the disease or disorder is mediated through

muscarinic receptors, comprising administering to said animal or human, a therapeutically effective amount of a compound having the structure of Formula II (Formula I when R_6 and $R_7 = H$), its pharmaceutically acceptable salts, pharmaceutically acceptable solvates, esters, enantiomers, diastereomers, N-oxides, polymorphs, prodrugs or metabolites, wherein Ar, R_1 , R_2 , W, X, Y, Z, Q and R_4 are as defined for Formula I.



Formula II

10. The method according to claim 8 for treatment or prophylaxis of an animal or a human suffering from a disease or disorder of the respiratory, urinary and gastrointestinal systems, wherein the disease or disorder is mediated through muscarinic receptors, comprising administering to said animal or human, a therapeutically effective amount of a compound having the structure of Formula III [Formula I wherein W is $(CH_2)_p$ where $p = 0$, X is no atom and Y is $(CH_2)_q$ where $q=0$, $R_6 = H$, $R_7 = H$] and its pharmaceutically acceptable salts, pharmaceutically acceptable solvates, esters, enantiomers, diastereomers, N-oxides, polymorphs, prodrugs or metabolites, wherein Ar, R_1 , R_2 , Z, Q and R_4 are as defined for Formula I.

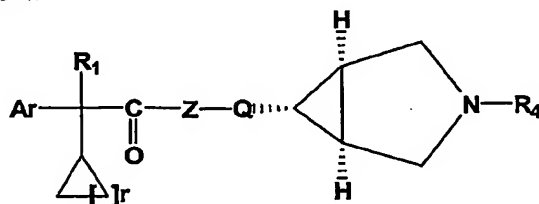


Formula III


11. The method according to claim 8 for treatment or prophylaxis of an animal or a human suffering from a disease or disorder of the respiratory, urinary and gastrointestinal systems, wherein the disease or disorder is mediated through muscarinic receptors, comprising administering to the said animal or human, a therapeutically effective amount of a compound having the structure of Formula IV (Formula I wherein W is $(CH_2)_p$ where $p=0$, X is no atom and Y is $(CH_2)_q$ where

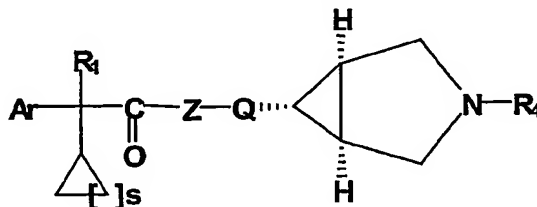


$q=0$, $R_6 = H$, $R_7 = H$ and $R_2 =$) and its pharmaceutically acceptable salts, pharmaceutically acceptable solvates, esters, enantiomers, diastereomers, N-oxides, polymorphs, prodrugs or metabolites, wherein Ar, R_1 , Z, Q and R_4 are as defined for Formula I, and r is 1 to 4.



Formula IV

12. The method according to claim 8 for treatment or prophylaxis of an animal or a human suffering from a disease or disorder of the respiratory, urinary and gastrointestinal systems, wherein the disease or disorder is mediated through muscarinic receptors, comprising administering to said animal or human, a therapeutically effective amount of a compound having the structure of Formula V (Formula-I wherein W is $(CH_2)_p$ where $p = 0$, X is no atom and Y is $(CH_2)_q$ where $q=0$, $R_6 = H$, $R_7 = H$, $R_2 =$ , R_1 is hydroxy, Ar is phenyl), its pharmaceutically acceptable salts, pharmaceutically acceptable solvates, esters, enantiomers, diastereomers, N-oxides, polymorphs, prodrugs or metabolites, wherein R_4 , Z and Q are the same as defined for Formula I, and s represents 1 to 2.



Formula V

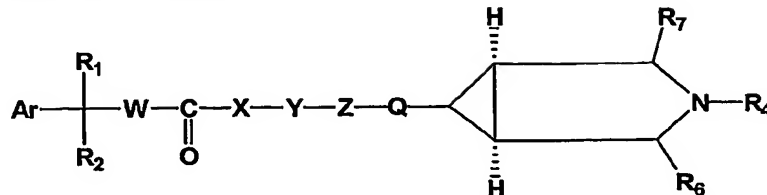
13. The method according to claim 8 wherein the disease or disorder is urinary incontinence, lower urinary tract symptoms (LUTS), bronchial asthma, chronic obstructive pulmonary disorders (COPD), pulmonary fibrosis, irritable bowel syndrome, obesity, diabetes or gastrointestinal hyperkinesis.

14. The method according to claim 9 wherein the disease or disorder is urinary incontinence, lower urinary tract symptoms (LUTS), bronchial asthma, chronic

obstructive pulmonary disorders (COPD), pulmonary fibrosis, irritable bowel syndrome, obesity, diabetes or gastrointestinal hyperkinesis.

15. The method according to claim 10 wherein the disease or disorder is urinary
5 incontinence, lower urinary tract symptoms (LUTS), bronchial asthma, chronic obstructive pulmonary disorders (COPD), pulmonary fibrosis, irritable bowel syndrome, obesity, diabetes or gastrointestinal hyperkinesis
16. The method according to claim 11 wherein the disease or disorder is urinary
10 incontinence, lower urinary tract symptoms (LUTS), bronchial asthma, chronic obstructive pulmonary disorders (COPD), pulmonary fibrosis, irritable bowel syndrome, obesity, diabetes or gastrointestinal hyperkinesis.
17. The method according to claim 12 wherein the disease or disorder is urinary
15 incontinence, lower urinary tract symptoms (LUTS), bronchial asthma, chronic obstructive pulmonary disorders (COPD), pulmonary fibrosis, irritable bowel syndrome, obesity, diabetes or gastrointestinal.
18. The method for treatment or prophylaxis of an animal or a human suffering from a
20 disease or disorder of the respiratory, urinary and gastrointestinal systems, wherein the disease or disorder is mediated through muscarinic receptors, comprising administering to said animal or human, a therapeutically effective amount of the pharmaceutical composition according to claim 7.
- 25 19. The method according to claim 18 wherein the disease or disorder urinary incontinence, lower urinary tract symptoms (LUTS), bronchial asthma, chronic obstructive pulmonary disorders (COPD), pulmonary fibrosis, irritable bowel syndrome, obesity, diabetes or gastrointestinal hyperkinesis.

20. A process of preparing a compound of Formula I,



Formula I

and its pharmaceutically acceptable salts, pharmaceutically acceptable solvates, esters, enantiomers, diastereomers, N-oxides, polymorphs, prodrugs or metabolites, wherein

Ar represents an aryl or a heteroaryl ring having 1-2 hetero atoms selected from the group consisting of oxygen, sulphur and nitrogen atoms, the aryl or heteroaryl rings may be unsubstituted or substituted by one to three substituents independently selected from lower alkyl (C₁-C₄), lower perhalo alkyl (C₁-C₄), cyano, hydroxy, nitro, lower alkoxy (C₁-C₄), lower perhalo alkoxy (C₁-C₄), unsubstituted amino, N-lower alkyl (C₁-C₄) amino or N-lower alkyl(C₁-C₄) amino carbonyl;

R₁ represents a hydrogen, hydroxy, hydroxy methyl, amino, alkoxy, carbamoyl or halogen (e.g. fluorine, chlorine, bromine and iodine);

R₂ represents alkyl, C₃-C₇ cycloalkyl ring, a C₃-C₇ cyclo alkenyl ring, an aryl or a heteroaryl ring having 1 to 2 hetero atoms selected from a group consisting of oxygen, sulphur and nitrogen atoms; the aryl or a heteroaryl ring may be unsubstituted or substituted by one to three substituents independently selected from lower alkyl (C₁-C₄), lower perhalo alkyl (C₁-C₄), cyano, hydroxy, nitro, lower alkoxy, carbonyl, halogen, lower alkoxy (C₁-C₄), lower perhalo alkoxy (C₁-C₄), unsubstituted amino, N-lower alkyl(C₁-C₄)amino, N-lower alkyl(C₁-C₄)amino carbonyl;

W represents (CH₂)_p, where p represents 0 to 1;

X represents an oxygen, sulphur, nitrogen or no atom;

Y represents CHR₅CO wherein R₅ represents hydrogen or methyl or (CH₂)_q wherein q represents 0 to 4;

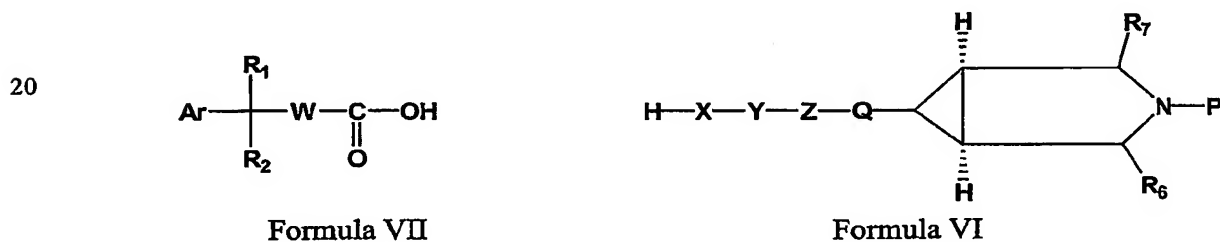
Z represents oxygen, sulphur, NR₁₀, wherein R₁₀ represents hydrogen, C₁₋₆ alkyl;

Q represents $(CH_2)_n$ wherein n represents 0 to 4, or CHR_8 wherein R_8 represents H, OH, C_{1-6} , alkyl, alkenyl alkoxy or CH_2CHR_9 wherein R_9 represents H, OH, lower alkyl (C_1-C_4) or lower alkoxy (C_1-C_4);

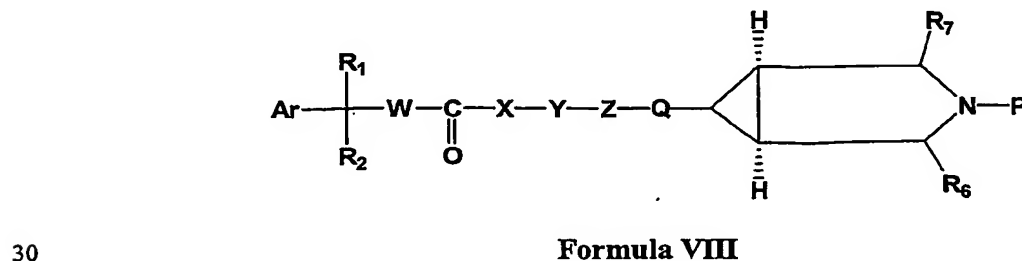
5 R_6 and R_7 are independently selected from COOH, H, CH_3 , $CONH_2$, NH_2 , CH_2NH_2 ;

R_4 represents C_1-C_{15} saturated or unsaturated aliphatic hydrocarbon groups in which any 1 to 6 hydrogen atoms may be substituted with the group independently selected from halogen, arylalkyl, arylalkenyl, heteroarylalkyl or heteroarylalkenyl having 1 to 2 hetero atoms selected from a group consisting of nitrogen, oxygen and sulphur atoms with option that any 1 to 3 hydrogen atoms on the ring in said arylalkyl, arylalkenyl, hetero arylalkenyl group may be substituted with lower alkyl(C_1-C_4), lower perhalo alkyl (C_1-C_4), cyano, hydroxyl, nitro, lower alkoxy, carbonyl, halogen, lower alkoxy (C_1-C_4), lower perhaloalkoxy (C_1-C_4), unsubstituted amino, N-lower alkyl(C_1-C_4) amino, N-lower alkyl (C_1-C_4)amino carbonyl, comprising

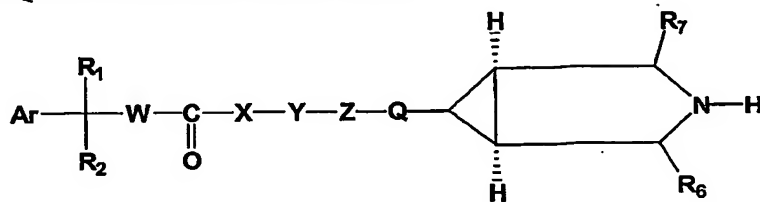
(a) condensing a compound of Formula-VII with a compound of Formula VI



25 wherein Ar, R_1 , R_2 , W, X, Y, Z, Q, R_6 , and R_7 have the same meanings as defined earlier for Formula I, to give a protected compound of Formula VIII wherein Ar, R_1 , R_2 , W, X, Y, Z, Q, are the same as defined earlier and P is a protecting group for an amino group



(b) deprotecting the compound of Formula VIII in the presence of a deprotecting agent to give an unprotected intermediate of Formula IX wherein Ar, R₁, R₂, W, X, Y, Z, and Q are the same as defined earlier,



Formula IX

- 10 (c) the intermediate of Formula IX is N-alkylated or benzylated with a suitable alkylating or benzylating agent to give a compound of Formula I wherein Ar, R₁, R₂, W, X, Y, Z, Q, R₆ and R₇ are the same as defined earlier.
- 15 21. The process according to claim 20 wherein P is any protecting group for an amino group and is selected from the group consisting of benzyl and t-butyloxy carbonyl groups.
- 20 22. The process according to claim 20 wherein the reaction of a compound of Formula VI with a compound of Formula VII to give a compound of Formula VIII is carried out in the presence of a condensing agent which is selected from the group consisting of 1-(3-dimethyl amino propyl)-3-ethyl carbodiimide hydrochloride (EDC) and 1,8-diazabicyclo [5.4.0]undec-7-ene (DBU).
- 25 23. The process according to claim 20 wherein the reaction of a compound of Formula VI with a compound of Formula VII to give a compound of Formula VIII is carried out in a suitable polar aprotic solvent selected from the group consisting of N,N-dimethylformamide, dimethyl sulfoxide, toluene, and xylene.
- 30 24. The process according to claim 20 wherein the reaction of compound of Formula VI with a compound of Formula VII is carried out at 0-140°C.
25. The process according to claim 20 wherein the deprotection of a compound of Formula VIII to give a compound of Formula IX is carried out with a deprotecting

agent which is selected from the group consisting of palladium on carbon, trifluoroacetic acid (TFA) and hydrochloric acid

- 5 26. The process according to claim 20 wherein the deprotection of a compound of Formula VIII to give a compound of Formula IX is carried out in a suitable organic solvent selected from the group consisting of methanol, ethanol, tetrahydrofuran and acetonitrile.
- 10 27. The process according to claim 20 wherein the N-alkylation or benzylation of a compound of Formula IX to give a compound of Formula I is carried out with a suitable alkylating or benzylating agent, L-R₄ wherein L is any leaving group and R₄ is the same as defined earlier.
- 15 28. The process according to claim 26 wherein the leaving group is selected from the group consisting of halogen, O-mestyl and O-tosyl groups.
- 20 29. The process according to claim 26 wherein the N-alkylation or benzylation of a compound of Formula IX to give a compound of Formula I is carried out in a suitable organic solvent selected from the group consisting of N,N-dimethylformamide, dimethyl sulfoxide, tetrahydrofuran and acetonitrile.